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AIRCRAFT ELECTRICAL SYSTEMS SPECIALIST CAREER LADDER AFSC 42350--ETC(U)
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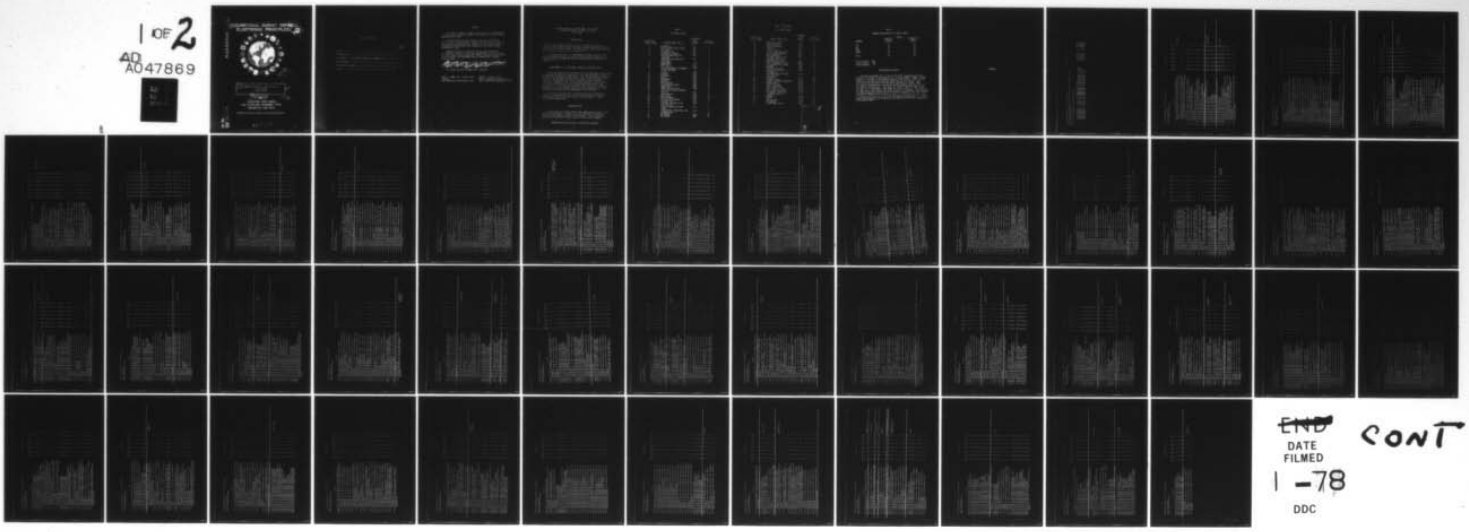

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OCCUPATIONAL SURVEY REPORT.
ELECTRONIC PRINCIPLES

AIRCRAFT ELECTRICAL SYSTEMS SPECIALIST
CAREER LADDER
AFSC 42350

AFPT-90-423-222
27 OCTOBER 1977

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OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Aircraft Electrical Systems Specialty, AFSC 42350.

The Electronic Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Major Walter F. Kasper. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

Computer programs for analyzing the data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Distribution of this report is made upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Colonel, USAF
Commander
USAF Occupational Measurement Center

WALTER E. DRISKILL, Ph.D.
Chief, Occupational Survey Branch
USAF Occupational Measurement Center

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
AIRCRAFT ELECTRICAL SYSTEMS SPECIALIST
AFSC 42350

INTRODUCTION

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Aircraft Electrical Systems Specialist (AFSC 42350). The data for this report were collected during the period July through September 1977.

This report describes: (1) development and administration of the survey instrument; and (2) electronic principles used by DAFSC 5-skill level personnel both CONUS and overseas and assigned to selected major commands.

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

The EPI was developed by personnel from the Occupational Survey Branch who were well qualified in theoretical physics and electronics, as well as in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Representing the five ATC training centers, electronics experts who averaged 12 years of maintenance experience and four years of electronic principles instruction experience spent several weeks refining the EPI. In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted during the development of the inventory.

The final version of the EPI used in this survey contained 1,257 items in 62 subject matter areas covering all electronic principles training given at the five ATC technical training centers. Table 1 lists the 62 subject areas.

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 42350 airmen worldwide. Responses from 346 individuals represented 19 percent of the total of all AFSC 42350 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

TABLE 1

EPI SUBJECT AREAS

SEQUENCE OF SUBJECT AREAS	SUBJECT AREA TITLE	BEGINNING ITEM NUMBER	GPSUM PAGE NUMBER
1	MATHEMATICS	A1	2
2	DIRECT CURRENT AND VOLTAGE	A15	2
3	RESISTANCE	A24	2
4	MULTIMETER USES	B52	3
5	ALTERNATING CURRENT	B61	4
6	INDUCTORS AND INDUCTIVE REACTANCE	B67	4
7	CAPACITORS AND CAPACITIVE REACTANCE	C92	5
8	TRANSFORMERS	C128	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	D229	10
12	FILTERS	D239	10
13	COUPLING	E261	11
14	SOLDERING	E273	11
15	RELAYS	E295	12
16	MICROPHONES	F314	12
17	SPEAKERS	F327	13
18	OSCILLOSCOPES	F342	13
19	SEMICONDUCTOR DIODES	G354	13
20	TRANSISTORS	G404	15
21	TRANSISTOR AMPLIFIERS	G428	16
22	SOLID-STATE SPECIAL PURPOSE DEVICES	H477	19
23	POWER SUPPLIES	H483	19
24	OSCILLATORS	H512	19
25	MULTIVIBRATORS	I539	20
26	LIMITERS AND CLAMPERS	I555	21
27	ELECTRON TUBES	I565	21
28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS	J609	22
29	SPECIAL PURPOSE ELECTRON TUBES	J616	23
30	HETERODYNING, MODULATION, AND DEMODULATION	J632	23
31	AM SYSTEMS	K638	23
32	FM SYSTEMS	K666	24

TABLE 1 (CONTINUED)

EPI SUBJECT AREAS

SEQUENCE OF SUBJECT AREAS	SUBJECT AREA TITLE	BEGINNING ITEM NUMBER	GPSUM PAGE NUMBER
33	NUMBERING SYSTEMS	K685	25
34	LOGIC FUNCTIONS	L695	25
35	BOOLEAN EQUATIONS	L708	26
36	COUNTERS	L733	27
37	TIMING CIRCUITS	M757	27
38	USE OF SIGNAL GENERATORS	M769	28
39	MOTORS AND GENERATORS	M779	28
40	METER MOVEMENTS	N808	29
41	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS	N818	29
42	WAVESHAPING CIRCUITS	N834	30
43	SINGLE SIDEBAND SYSTEMS	0845	30
44	PULSE MODULATION SYSTEMS	0875	31
45	ANTENNAS	0914	32
46	TRANSMISSION LINES	P953	34
47	WAVEGUIDES AND CAVITY RESONATORS	P984	35
48	MICROWAVE AMPLIFIERS AND OSCILLATORS	P1034	37
49	REGISTERS	Q1110	39
50	STORAGE DEVICES	Q1117	40
51	DIGITAL TO ANALOG CONVERTERS	Q1126	40
52	PHANTASTRONS	Q1140	41
53	SCHMITT TRIGGERS	R1141	41
54	CABLE FABRICATION	R1144	41
55	INPUT/OUTPUT DEVICES	S1146	41
56	PHOTO SENSITIVE DEVICES	S1149	41
57	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	S1150	41
58	INFRARED	T1159	41
59	LASERS	T1186	42
60	DISPLAY TUBES	T1220	43
61	PROGRAMMING	U1234	43
62	DB AND POWER RATIOS	U1255	44

TABLE 2

COMMAND REPRESENTATION OF SURVEY SAMPLE

COMMAND	42350 PERCENT ASSIGNED	PERCENT OF SAMPLE
TAC	27	18
SAC	19	21
MAC	18	24
USAFE	10	12
OTHER	26	25
TOTAL	100	100

Total Assigned: 1856
Total Sampled: 346
Percent Sampled: 19

PRESENTATON OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the four selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the *Resistance* area results are given on page 5 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Multimeter Uses (p. 3) and Relays (p. 12) to low in areas such as RCL Circuits (pp. 8-9) and Boolean Equations (p. 26). Additional AFSC 42350 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 423X0 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY =	SPC051	ALL AIRMEN DAFSC 42350		CONTAINING	346 MEMBERS.
GROUP IDENTITY =	SPC052	ALL AIRMEN DAFSC 42350	STATIONED IN CONUS	CONTAINING	224 MEMBERS.
GROUP IDENTITY =	SPC053	ALL AIRMEN DAFSC 42350	STATIONED OVERSEAS	CONTAINING	121 MEMBERS.
GROUP IDENTITY =	SPC054	ALL AIRMEN DAFSC 42350	ASSIGNED TO TAC	CONTAINING	62 MEMBERS.
GROUP IDENTITY =	SPC055	ALL AIRMEN DAFSC 42350	ASSIGNED TO SAC	CONTAINING	72 MEMBERS.
GROUP IDENTITY =	SPC056	ALL AIRMEN DAFSC 42350	ASSIGNED TO MAC	CONTAINING	83 MEMBERS.
GROUP IDENTITY =	SPC057	ALL AIRMEN DAFSC 42350	ASSIGNED USAFE	CONTAINING	42 MEMBERS.

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
A	1	A1-01 IN YOUR PRESENT JOB, DO YOU USE INSTRUMENTS, SUCH AS METERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.	79	80	79	89	69	80	81	MATHEMATICS
A	2	A1-02 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.	39	40	38	44	31	42	31	
A	3	A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	18	18	18	18	13	19	12	
A	4	A1-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY.	8	8	8	5	3	12	2	
A	5	A1-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES.	16	16	17	13	14	20	7	
A	6	A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.	4	4	4	2	3	8	2	
A	7	A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	4	4	4	5	1	8	2	
A	8	A1-08 DO YOU SOLVE QUADRATIC EQUATIONS.	6	6	6	2	3	11	2	
A	9	A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS.	3	3	3	2	1	8	2	
A	10	A1-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.	9	9	7	5	7	14	0	
A	11	A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	10	9	12	10	4	12	7	
A	12	A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES.	5	5	5	5	1	11	5	
A	13	A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.	6	5	8	5	3	10	7	
A	14	A1-14 DO YOU SOLVE OR USE PROPORTIONS.	9	7	13	6	6	11	12	
A	15	A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT (V).	97	97	97	100	97	95	93	DIRECT CURRENT AND VOLTAGE
A	16	A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	60	62	57	63	61	54	48	
A	17	A2-03 DO YOU USE THE TERM OHM.	97	96	98	98	97	93	95	
A	18	A2-04 DO YOU USE THE TERM ION.	23	25	20	23	25	22	14	
A	19	A2-05 DO YOU USE THE TERM DYNE.	13	12	16	8	11	14	14	
A	20	A2-06 DO YOU USE THE TERM AMPERE.	91	90	93	94	94	88	86	
A	21	A2-07 DO YOU USE THE TERM NEUTRON.	28	28	28	27	29	28	19	
A	22	A2-08 DO YOU USE THE TERM COULOMB.	12	12	13	10	8	17	2	
A	23	A2-09 DO YOU USE THE TERM PROTON.	28	28	28	24	31	27	21	
A	24	A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	80	81	79	81	82	78	76	RESISTANCE
A	25	A3-02 DO YOU INSPECT RESISTORS.	79	80	76	79	82	72	74	
A	26	A3-03 DO YOU CLEAN RESISTORS.	54	56	50	53	54	51	48	
A	27	A3-04 DO YOU ADJUST RESISTORS.	58	62	50	52	64	54	40	
A	28	A3-05 DO YOU CHECK OHMIC VALUE OF RESISTORS.	83	84	80	82	86	82	74	
A	29	A3-06 DO YOU REMOVE OR REPLACE RESISTORS.	84	84	83	79	89	77	86	
A	30	A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM.	36	35	36	37	31	40	31	
A	31	A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIXED RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS.	73	74	72	66	78	70	69	
A	32	A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT, OR POTENTIOMETER.	75	76	71	73	81	66	71	
A	33	A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE.	46	49	41	34	50	46	45	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
A	34	A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE.	34	36	31	24	32	35	24	
A	35	A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE.	18	18	17	13	17	20	14	
A	36	A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE.	55	52	59	58	57	54	60	
A	37	A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES	86	86	86	87	89	82	83	
A	38	A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	47	48	45	48	42	42	40	
A	39	A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	45	47	43	48	42	42	36	
A	40	A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	47	50	43	47	46	43	38	
A	41	A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	37	40	32	40	35	35	29	
A	42	A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	43	45	40	47	38	41	33	
A	43	A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	43	44	40	48	36	42	31	
A	44	A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	43	45	40	48	36	42	33	
A	45	A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	36	37	34	40	28	33	29	
A	46	A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	33	35	30	39	26	34	24	
A	47	A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	42	43	40	50	36	39	31	
A	48	A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	42	44	39	52	36	39	29	
A	49	A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	42	44	40	50	38	37	31	
A	50	A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	35	35	36	39	32	29	29	
A	51	A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	32	33	29	39	28	29	24	
B	52	B1-01 DO YOU MEASURE RESISTANCE.	99	99	98	100	99	99	98	
B	53	B1-02 DO YOU REPAIR OHMMETERS.	26	29	21	24	47	25	19	
B	54	B1-03 DO YOU MEASURE VOLTAGE.	98	98	98	100	100	100	95	MULTIMETER USES
B	55	B1-04 DO YOU REPAIR VOLTMETERS.	21	23	17	21	40	16	14	
B	56	B1-05 DO YOU REPAIR AMMETERS.	16	17	15	18	29	11	10	
B	57	B1-06 DO YOU MEASURE CURRENT.	91	92	90	94	97	86	90	
B	58	B1-07 DO YOU USE MULTIMETERS.	98	98	98	98	99	99	98	
B	59	B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	8	6	6	3	8	13	2	
B	60	B1-09 DO YOU READ SCHEMATICS.	98	98	98	98	100	99	98	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
B	61	B2-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE (RMS).	44	44	44	34	49	42	31	ALTERNATING CURRENT
B	62	B2-02 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE.	46	50	39	44	53	45	29	
B	63	B2-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC).	61	61	62	60	64	61	52	
B	64	B2-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH.	27	29	25	24	26	34	17	
B	65	B2-05 DO YOU USE OR REFER TO THE TERM FREQUENCY.	88	89	85	90	93	88	79	
B	66	B2-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.	23	26	18	18	28	24	12	
B	67	B3-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	27	28	27	23	26	31	17	
B	68	B3-02 DO YOU INSPECT INDUCTORS.	25	28	21	23	22	31	14	
B	69	B3-03 DO YOU CLEAN INDUCTORS.	19	21	15	18	15	23	10	
B	70	B3-04 DO YOU ADJUST INDUCTORS.	14	16	10	11	17	19	7	INDUCTORS AND INDUCTIVE REACTANCE
B	71	B3-05 DO YOU REMOVE OR REPLACE INDUCTORS.	25	28	21	23	25	30	14	
B	72	B3-06 DO YOU USE OR REFER TO INDUCTANCE.	24	25	21	24	19	29	14	
B	73	B3-07 DO YOU USE OR REFER TO HENRIES.	17	18	16	15	17	18	10	
B	74	B3-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	20	20	20	21	19	24	10	
B	75	B3-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	5	5	4	2	0	12	5	
B	76	B3-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	3	3	4	2	1	7	5	
B	77	B3-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS	6	5	7	3	6	10	5	
B	78	B3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL.	12	12	12	11	7	22	5	
B	79	B3-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE.	11	11	12	10	6	19	7	
B	80	B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.	9	10	8	8	6	14	7	
B	81	B3-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE PERMEABILITY OF THE CORE MATERIAL.	9	9	9	10	1	17	5	
B	82	B3-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS.	9	9	7	8	6	13	2	
B	83	B3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTANCE IN SERIES.	9	8	9	6	4	17	2	
B	84	B3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	9	8	10	6	4	17	5	
B	85	B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	9	8	10	6	4	17	5	
B	86	B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	16	17	12	15	13	23	2	
B	87	B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	9	10	7	8	6	14	5	
B	88	B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.	12	13	11	8	10	22	2	
B	89	B3-23 DO YOU WORK WITH POWER INDUCTORS.	17	20	12	19	14	24	7	
B	90	B3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	3	4	3	2	1	5	5	
B	91	B3-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	2	2	1	0	1	4	2	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
C	92	C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.	58	62	50	56	68	54	50	
C	93	C1-02 DO YOU INSPECT CAPACITORS.	58	63	50	50	75	53	50	CAPACITORS AND
C	94	C1-03 DO YOU CLEAN CAPACITORS.	36	39	29	29	40	40	26	CAPACITIVE REACTANCE
C	95	C1-04 DO YOU ADJUST CAPACITORS.	18	21	13	21	17	19	12	
C	96	C1-05 DO YOU TEST CAPACITORS.	50	54	45	50	57	46	48	
C	97	C1-06 DO YOU DISCHARGE CAPACITORS.	37	40	31	32	42	37	24	
C	98	C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.	62	64	58	60	74	55	60	
C	99	C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	9	11	6	8	3	19	2	
C	100	C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	4	5	2	3	0	10	0	
C	101	C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	28	29	27	29	25	25	21	
C	102	C1-11 DO YOU USE OR REFER TO CAPACITANCE.	43	44	43	44	42	45	45	
C	103	C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT	10	10	10	10	6	13	10	
C	104	C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	33	35	29	32	36	39	19	
C	105	C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE	26	27	24	27	22	33	17	
C	106	C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	16	15	18	10	14	26	12	
C	107	C1-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS	57	61	50	48	75	52	45	
C	108	C1-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS	60	61	57	56	67	59	52	
C	109	C1-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC	47	49	44	35	64	47	38	
C	110	C1-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS	20	21	18	24	18	14	21	
C	111	C1-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS	9	9	7	6	6	14	5	
C	112	C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT	9	8	9	5	7	13	7	
C	113	C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS	8	7	10	8	4	12	7	
C	114	C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	15	16	13	21	13	18	14	
C	115	C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL	14	15	14	18	11	18	14	
C	116	C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	14	15	14	18	11	19	14	
C	117	C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO	18	19	17	16	11	27	17	
C	118	C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS	22	22	22	16	19	28	17	
C	119	C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY	16	15	18	13	17	22	14	
C	120	C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE	12	13	12	10	10	19	5	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
C 121	C1-30 DO YOU WORK WITH ROTOR-STATOR (VARIABLE) CAPACITORS	18	20	15	18	17	22	17	
C 122	C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS	12	12	11	6	11	17	7	
C 123	C1-32 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS	36	38	33	29	42	41	36	
C 124	C1-33 DO YOU WORK WITH PAPER (FIXED) CAPACITORS	25	26	22	19	29	29	19	
C 125	C1-34 DO YOU WORK WITH MICA (FIXED) CAPACITORS	26	28	24	27	22	31	21	
C 126	C1-35 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS	31	31	31	29	31	35	26	
C 127	C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS	29	33	21	32	39	27	24	
C 128	C2-01 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB	80	83	74	82	86	83	60	
C 129	C2-02 DO YOU INSPECT TRANSFORMERS	85	89	78	97	94	90	67	
C 130	C2-03 DO YOU CLEAN TRANSFORMERS	60	65	49	61	72	58	38	
C 131	C2-04 DO YOU ADJUST TRANSFORMERS	35	39	26	35	36	40	21	TRANSFORMERS
C 132	C2-05 DO YOU TROUBLESHOOT TRANSFORMERS	86	87	84	94	94	83	79	
C 133	C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS	91	92	88	98	99	86	76	
C 134	C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING	12	14	9	6	18	16	5	
C 135	C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M)	11	10	12	3	10	13	0	
C 136	C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M	7	8	5	5	4	12	0	
C 137	C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS	9	10	6	10	4	14	2	
C 138	C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS	10	11	10	11	8	14	5	
C 139	C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS	10	9	12	8	6	17	7	
C 140	C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS	6	5	8	3	6	8	5	
C 141	C2-14 DO YOU WORK WITH AUTOTRANSFORMERS	73	72	74	82	78	66	67	
C 142	C2-15 DO YOU WORK WITH POWER TRANSFORMERS	78	78	77	77	92	76	67	
C 143	C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS	9	7	13	6	7	14	12	
C 144	C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS	3	1	7	0	1	6	7	
C 145	C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS	23	24	21	19	24	16	19	
C 146	C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE	75	75	75	82	83	66	69	
C 147	C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE	71	71	72	79	79	60	64	
C 148	C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES	65	68	58	71	72	63	60	
C 149	C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	33	32	35	34	36	31	31	
C 150	C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	53	55	50	66	61	46	38	
C 151	C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS	72	73	69	81	85	67	60	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
C 152	C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS	49	48	50	50	61	49	26	
C 153	C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	51	52	50	52	64	51	33	
C 154	C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	57	57	56	60	69	57	38	
C 155	C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	29	30	27	24	32	30	19	
C 156	C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	35	36	34	31	39	37	17	
C 157	C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS	45	46	43	47	56	46	21	
C 158	C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS	34	34	33	37	40	35	21	
C 159	C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH	18	17	21	15	21	23	10	
C 160	C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO	18	16	21	15	17	20	12	
C 161	C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS	34	36	31	53	31	33	21	
C 162	C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS	14	15	14	16	13	17	5	
C 163	C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS	12	13	11	5	13	16	2	
C 164	C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS	49	50	49	45	68	51	31	
C 165	C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS	49	50	46	48	61	48	36	
C 166	C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS	23	22	24	16	31	25	21	
C 167	C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS	18	17	18	11	21	18	19	
C 168	C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	51	51	50	50	64	48	36	
C 169	C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS	53	54	51	50	67	53	40	
C 170	C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS	11	11	10	5	13	12	10	
C 171	C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS	66	66	67	56	65	69	69	
C 172	C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS	29	31	25	29	28	31	21	
C 173	C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS	15	17	12	13	10	22	7	MAGNETISM
C 174	C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS	13	14	12	13	11	19	7	
C 175	C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS	16	15	18	11	11	23	19	
C 176	C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM	46	44	50	35	47	53	48	
C 177	C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX	39	40	36	42	32	46	33	
C 178	C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM	8	9	7	5	3	17	10	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
C 179	C3-09 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM	8	8	7	5	4	16	2	
C 180	C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION	32	29	36	29	25	36	36	
C 181	C3-11 DO YOU USE OR REFER TO FLUX DENSITY	16	17	15	21	7	23	10	
C 182	C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT	57	59	54	52	57	61	55	
C 183	C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES	27	28	26	35	21	31	21	
C 184	C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL	24	25	22	29	21	29	19	
D 185	D1-01 DO YOU WORK WITH RC, LR, RCL CIRCUITS IN YOUR PRESENT JOB	18	20	15	16	22	23	12	
D 186	D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS	10	9	10	6	8	14	5	RCL CIRCUITS
D 187	D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS	5	4	7	6	6	7	2	
D 188	D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS	8	8	9	6	4	14	5	
D 189	D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS	8	7	8	6	4	13	5	
D 190	D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS	6	5	7	5	4	10	5	
D 191	D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS	14	15	13	11	17	18	7	
D 192	D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS	14	14	12	13	17	17	5	
D 193	D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS	11	11	11	8	11	17	5	
D 194	D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS	10	10	9	6	8	17	2	
D 195	D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS	13	14	12	11	15	17	5	
D 196	D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS	14	14	14	11	17	16	7	
D 197	D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS	8	8	9	6	6	12	2	
D 198	D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS	2	2	2	3	3	0	0	
D 199	D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS	5	5	4	5	1	6	2	
D 200	D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS	8	7	10	6	6	10	7	
D 201	D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS	5	4	6	0	1	12	2	
D 202	D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS	2	2	2	2	1	4	0	
D 203	D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS	3	2	4	2	1	6	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057
D 204	D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS	4	4	5	3	4	7	2
D 205	D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS	6	5	7	2	4	11	7
D 206	D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	8	8	6	5	7	12	5
D 207	D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS	8	7	9	5	4	13	5
D 208	D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS	7	6	8	5	6	11	5
D 209	D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS	8	8	7	6	3	14	2
D 210	D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS	6	6	6	5	7	13	2
D 211	D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS	8	8	7	6	4	13	2
D 212	D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS	8	8	8	6	4	13	2
D 213	D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS	8	8	8	8	7	13	5
D 214	D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS	8	8	7	8	4	13	2
D 215	D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS	5	6	5	5	3	11	2
D 216	D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD	6	7	5	6	1	12	2
D 217	D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW	10	11	7	6	11	14	7
D 218	D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS	20	19	21	16	21	24	12
D 219	D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION	9	11	6	5	10	18	7
D 220	D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS	18	17	21	13	21	23	12
D 221	D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION	7	8	6	5	8	14	2
D 222	D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA= 0, PF = 1, AND PA = PT FOR RESONANT CIRCUITS	3	3	2	3	1	6	0
D 223	D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS	4	4	5	3	3	6	0
D 224	D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS	6	6	7	8	3	10	2
D 225	D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS	5	4	5	5	1	8	5
D 226	D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE	5	7	3	2	4	12	5
D 227	D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q	2	1	2	0	0	5	2
D 228	D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS	8	10	6	5	10	14	5

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
D 229	D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS	9	9	8	5	7	14	10	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)
D 230	D2-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS	4	5	2	0	3	11	0	
D 231	D2-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE	8	9	7	3	6	17	2	
D 232	D2-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS	3	3	2	0	1	8	0	
D 233	D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC)	5	5	4	2	3	11	2	
D 234	D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS	3	4	3	2	3	6	0	
D 235	D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS	6	6	6	5	4	10	2	
D 236	D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS	5	5	5	3	3	10	2	
D 237	D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC TIMES	5	6	5	2	4	11	2	
D 238	D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER FIVE (5) TIME CONSTANTS	4	4	4	2	3	8	2	
D 239	D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB	21	24	16	21	25	18	12	
D 240	D3-02 DO YOU INSPECT FILTER CIRCUITS	17	19	15	16	19	17	10	FILTERS
D 241	D3-03 DO YOU CLEAN FILTER CIRCUITS	11	13	7	8	13	13	5	
D 242	D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS	7	8	4	3	4	12	5	
D 243	D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL	15	18	9	16	17	18	7	
D 244	D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS	14	16	10	18	14	18	5	
D 245	D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT	18	19	16	18	17	18	12	
D 246	D3-08 DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT PARTS	13	14	11	11	17	14	5	
D 247	D3-09 DO YOU WORK WITH LOW PASS FILTERS	5	6	4	10	1	8	5	
D 248	D3-10 DO YOU WORK WITH HIGH PASS FILTERS	6	7	4	8	1	10	5	
D 249	D3-11 DO YOU WORK WITH BANDPASS FILTERS	3	3	4	3	1	4	5	
D 250	D3-12 DO YOU WORK WITH BAND-REJECT FILTERS	4	4	3	2	1	4	5	
D 251	D3-13 DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH	12	11	13	6	17	7	12	
D 252	D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATION	3	4	2	8	1	2	2	
D 253	D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATION	4	4	2	8	1	2	2	
D 254	D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION	2	2	2	2	1	5	2	
D 255	D3-17 DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION	11	11	12	6	15	7	5	
D 256	D3-18 DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT CIRCUITS	7	8	6	8	6	11	2	
D 257	D3-19 DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL CIRCUITS	11	13	9	15	7	13	2	
D 258	D3-20 DO THE FILTERS YOU WORK WITH USE SERIES RESONANT CIRCUITS	8	9	6	11	6	11	2	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
U 259	D3-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT	8	8	10	3	13	5	5	
D 260	D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS	4	4	3	3	1	11	2	
E 261	E1-01 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB	7	8	4	10	7	8	7	
E 262	E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC COUPLING	4	6	2	5	3	7	2	
E 263	E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING	4	5	2	3	3	7	5	
E 264	E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING	6	8	2	8	7	7	2	
E 265	E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING	4	5	2	5	3	7	2	
E 266	E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING	4	5	2	3	3	7	5	
E 267	E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING	6	8	2	8	7	7	2	
E 268	E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS	4	5	2	8	1	7	2	
E 269	E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS	4	5	2	6	3	7	0	
E 270	E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS	3	4	2	3	3	7	0	
E 271	E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS	4	6	2	8	4	7	0	
E 272	E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS	2	3	1	0	4	4	2	
E 273	E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS	92	94	88	90	94	90	88	
E 274	E2-02 DO YOU SELECT TYPE OF SOLDER TO USE	85	87	82	90	83	81	83	
E 275	E2-03 DO YOU ADD FLUX TO CONNECTIONS	85	86	83	85	72	87	90	
E 276	E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS	77	78	74	81	69	77	79	
E 277	E2-05 DO YOU STRIP INSULATION FROM WIRES	96	96	95	97	96	94	95	
E 278	E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS	77	78	75	74	71	80	79	
E 279	E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS	94	95	92	95	94	90	93	
E 280	E2-08 DO YOU CUT WIRES	95	96	94	95	96	94	95	
E 281	E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS	86	87	86	85	88	86	90	
E 282	E2-10 DO YOU TIN SOLDERING IRON TIPS	94	96	90	95	96	89	93	
E 283	E2-11 DO YOU CLEAN SOLDERING IRON TIPS	96	97	93	98	96	92	95	
E 284	E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS	55	57	50	45	54	63	45	
E 285	E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS	81	83	76	84	85	72	71	
E 286	E2-14 DO YOU INSPECT SOLDERED CONNECTIONS	95	96	92	97	96	93	88	
E 287	E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING	44	44	43	37	43	43	36	
E 288	E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS	34	36	30	26	25	51	19	
E 289	E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS	71	71	70	68	68	69	79	
E 290	E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL	16	15	17	11	10	28	10	

COUPLING

SOLDERING

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
E 291	E2-19 DO YOU MAKE HARDWIRE CONNECTIONS	78	80	75	77	72	81	74	
E 292	E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS	49	53	41	44	56	52	45	
E 293	E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS	48	53	40	50	49	53	43	
E 294	E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS	42	45	36	42	39	48	38	
E 295	E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB	90	91	88	89	90	94	86	
E 296	E3-02 DO YOU ADJUST RELAYS	30	33	26	18	25	51	21	
E 297	E3-03 DO YOU CLEAN RELAYS	58	58	57	40	67	64	55	
E 298	E3-04 DO YOU INSPECT RELAYS	87	90	81	89	92	87	83	RELAYS
E 299	E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS	96	96	96	100	96	95	95	
E 300	E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS	25	26	21	18	28	33	21	
E 301	E3-07 DO YOU TROUBLESHOOT RELAYS	95	96	93	100	97	92	93	
E 302	E3-08 DO YOU STRAIGHTEN RELAY CONTACTS	34	36	30	18	36	41	33	
E 303	E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS	36	39	32	32	35	43	26	
E 304	E3-10 DO YOU PERFORM TASKS ON RELAY CORES	12	14	9	6	13	17	7	
E 305	E3-11 DO YOU PERFORM TASKS ON RELAY COILS	18	22	12	13	18	24	10	
E 306	E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES	17	21	10	6	18	24	10	
E 307	E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS	17	21	11	5	19	27	7	
E 308	E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPER (NO) SCHEMATIC SYMBOLS FOR RELAYS	85	86	83	89	86	86	83	
E 309	E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS	85	86	83	87	86	84	83	
E 310	E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS	82	83	79	85	85	82	79	
E 311	E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS	82	83	79	85	85	82	79	
E 312	E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS	81	79	84	76	82	82	88	
E 313	E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE	85	83	89	84	83	84	90	
F 314	F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES	3	3	2	2	4	4	2	
F 315	F1-02 DO YOU INSPECT MICROPHONES	1	1	2	0	0	2	2	MICROPHONES
F 316	F1-03 DO YOU CLEAN MICROPHONES	1	1	2	0	0	2	2	
F 317	F1-04 DO YOU OPERATE MICROPHONES	2	2	2	0	3	4	2	
F 318	F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OR MICROPHONES	2	2	2	0	3	4	2	
F 319	F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS	1	1	0	0	1	0	0	
F 320	F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES	0	0	1	0	0	1	0	
F 321	F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS	0	0	0	0	0	0	0	
F 322	F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES	0	0	0	0	0	0	0	
F 323	F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES	0	0	0	0	0	0	0	
F 324	F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES	0	0	1	0	0	0	2	
F 325	F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES	0	0	0	0	0	0	0	
F 326	F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES	0	0	0	0	0	0	0	

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
F 327 F2-01	IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	3	4	3	0	4	10	0	SPEAKERS
F 328 F2-02	DO YOU INSPECT SPEAKERS	2	2	2	0	1	5	0	
F 329 F2-03	DO YOU CLEAN SPEAKERS	0	0	0	0	0	0	0	
F 330 F2-04	DO YOU OPERATE SPEAKERS	2	2	2	0	1	6	0	
F 331 F2-05	DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS	3	3	3	2	1	8	0	
F 332 F2-06	DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	0	0	0	0	0	1	0	
F 333 F2-07	DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	2	1	2	0	0	6	0	
F 334 F2-08	DO YOU REMOVE OR REPLACE SPEAKER PARTS	1	1	0	0	0	1	0	
F 335 F2-09	DO YOU PERFORM ANY TASKS ON SPEAKER CONES	0	0	0	0	0	1	0	
F 336 F2-10	DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS	0	0	0	0	0	1	0	
F 337 F2-11	DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	1	1	0	0	0	1	0	
F 338 F2-12	DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	1	1	0	0	0	1	0	
F 339 F2-13	DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	0	0	0	0	0	0	0	
F 340 F2-14	DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	0	0	0	0	0	1	0	
F 341 F2-15	DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	0	0	0	0	0	1	0	
F 342 F3-01	DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	20	24	17	16	22	25	5	
F 343 F3-02	DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	19	21	16	13	22	25	5	OSCILLOSCOPES
F 344 F3-03	DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	15	17	12	11	19	20	2	
F 345 F3-04	DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	16	20	11	11	15	24	5	
F 346 F3-05	DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	19	21	15	15	21	23	5	
F 347 F3-06	DO YOU USE OSCILLOSCOPES TO MEASURE TIME	8	10	5	5	8	11	2	
F 348 F3-07	DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	8	9	4	2	8	14	2	
F 349 F3-08	DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	9	11	6	3	10	17	2	
F 350 F3-09	DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	6	7	4	3	7	10	2	
F 351 F3-10	DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	20	23	14	13	22	25	5	
F 352 F3-11	DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	15	17	10	11	17	22	2	
F 353 F3-12	DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	16	18	12	8	19	22	5	
G 354 G1-01	DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	54	52	57	61	30	61	40	
G 355 G1-02	DO YOU INSPECT DIODES	52	52	51	56	40	56	38	SEMICONDUCTOR DIODES
G 356 G1-03	DO YOU REMOVE OR REPLACE DIODES	55	54	56	61	38	65	40	
G 357 G1-04	DO YOU CHECK DIODES USING AN INSTRUMENT	51	52	50	60	38	61	37	
G 358 G1-05	DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	6	7	6	2	3	13	2	
G 359 G1-06	DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE LIAS RESISTANCE	14	15	12	11	8	23	10	
G 360 G1-07	DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	16	16	16	15	11	23	7	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057
G 361	G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	30	31	27	34	26	29	21
G 362	G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE	37	38	34	45	29	39	21
G 363	G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	10	10	11	10	10	14	5
G 364	G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	18	19	16	19	17	20	5
G 365	G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING	15	13	17	19	6	17	12
G 366	G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	4	4	4	3	1	10	0
G 367	G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	4	4	3	3	1	10	0
G 368	G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS 1N 538	20	21	17	24	10	25	17
G 369	G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	3	4	2	3	1	6	0
G 370	G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	4	4	5	3	3	8	0
G 371	G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	16	16	17	21	14	17	12
G 372	G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	5	7	2	5	3	12	0
G 373	G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	3	4	2	2	1	7	0
G 374	G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	4	4	3	3	1	8	0
G 375	G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	6	7	3	6	3	12	0
G 376	G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	5	7	2	5	1	12	0
G 377	G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	35	36	33	40	26	41	19
G 378	G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	13	12	16	13	8	17	5
G 379	G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)	19	19	20	24	14	27	7
G 380	G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)	11	12	9	15	4	19	5
G 381	G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS	25	25	25	24	21	29	14
G 382	G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	4	4	3	3	0	10	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
G 383	G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	3	3	3	3	0	7	0	
G 384	G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	4	4	4	5	0	10	0	
G 385	G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	4	4	2	3	0	10	0	
G 386	G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	6	8	4	10	1	11	0	
G 387	G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	10	10	10	11	4	13	7	
G 388	G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	4	4	4	5	1	7	2	
G 389	G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	4	4	4	5	1	7	2	
G 390	G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	17	17	18	18	17	23	7	
G 391	G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	16	15	17	16	13	20	2	
G 392	G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	4	5	3	5	3	10	0	
G 393	G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	4	4	3	5	3	6	0	
G 394	G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	4	5	3	5	1	10	0	
G 395	G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	4	5	2	5	1	8	0	
G 396	G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	6	6	3	6	3	14	0	
G 397	G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	6	7	5	5	1	8	0	
G 398	G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	3	4	3	2	0	8	0	
G 399	G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	10	10	9	8	8	10	5	
G 400	G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	9	10	8	11	8	12	2	
G 401	G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	7	8	7	8	7	11	2	
G 402	G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	9	9	7	10	8	12	2	
G 403	G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	9	10	8	13	10	12	2	
G 404	G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	26	29	21	29	24	35	19	
G 405	G2-02 DO YOU INSPECT TRANSISTORS	25	29	17	24	24	30	12	
G 406	G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	25	28	18	26	22	30	14	
G 407	G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	23	27	16	21	25	29	12	TRANSISTORS
G 408	G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	18	19	17	16	18	25	10	
G 409	G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	16	16	17	11	19	23	14	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
G 410	G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS	16	16	15	10	17	24	14	
G 411	G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	10	10	8	5	4	17	7	
G 412	G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	9	10	7	5	3	17	7	
G 413	G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)	14	16	10	11	10	20	12	
G 414	G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	10	13	5	6	13	14	5	
G 415	G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	25	28	20	24	24	29	19	
G 416	G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	23	25	18	24	19	27	17	
G 417	G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	13	13	12	10	11	16	14	
G 418	G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT IE (USUALLY IB BEING 2 TO 8 PERCENT OF IE)	8	9	5	5	7	16	2	
G 419	G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS	10	11	10	8	7	18	7	
G 420	G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	8	8	6	3	3	18	2	
G 421	G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	5	7	2	5	1	13	0	
G 422	G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	5	6	3	2	1	13	0	
G 423	G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	5	6	3	2	1	12	0	
G 424	G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	5	5	3	2	1	12	0	
G 425	G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS	3	4	2	2	0	7	0	
G 426	G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS	3	4	2	2	0	8	0	
G 427	G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS	3	3	2	2	0	7	0	
G 428	G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	6	9	2	10	6	11	0	
G 429	G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS	6	8	2	10	1	10	2	
G 430	G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	3	4	2	2	1	8	2	TRANSISTOR AMPLIFIERS
G 431	G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	5	8	1	6	4	11	0	
G 432	G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	5	6	2	6	1	11	2	
G 433	G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	6	9	2	10	4	11	2	
G 434	G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	5	6	2	6	0	10	2	
G 435	G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT	4	5	2	2	1	10	0	
G 436	G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	3	4	2	2	0	8	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057
G 437	G3-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT	4	5	2	2	0	11	0
G 438	G3-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	3	4	1	2	0	7	0
G 439	G3-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	4	5	2	2	0	11	0
G 440	G3-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL	3	4	1	2	0	7	0
G 441	G3-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)	2	3	1	0	0	7	0
G 442	G3-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	2	3	1	0	0	7	0
G 443	G3-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	2	3	1	0	0	7	0
G 444	G3-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	4	4	2	2	1	10	0
G 445	G3-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	4	4	2	2	1	10	0
G 446	G3-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	4	4	2	2	1	10	0
G 447	G3-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN	2	3	0	0	0	7	0
G 448	G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN	2	3	0	0	0	7	0
G 449	G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN	1	2	1	0	0	4	0
G 450	G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT [Q] OF THE TRANSISTOR)	2	3	1	0	0	6	0
G 451	G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT [Q] OF A TRANSISTOR AT DIFFERENT TEMPERATURES	2	2	1	0	0	5	0
G 452	G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION	2	3	1	2	0	6	0
G 453	G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION	3	4	2	3	1	7	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057
G 454	G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION	3	4	1	3	0	7	0
G 455	G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION	3	4	2	2	0	7	0
G 456	G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION	3	4	2	2	0	7	0
G 457	G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION	3	4	1	2	0	7	0
G 458	G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION	2	3	0	0	0	5	0
G 459	G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	3	4	1	2	1	6	0
G 460	G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	3	4	1	3	0	7	0
G 461	G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	2	3	1	2	0	6	0
G 462	G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	2	3	1	2	0	6	0
G 463	G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	2	3	1	2	0	6	0
G 464	G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	1	2	0	0	0	5	0
G 465	G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	2	3	1	0	0	6	0
G 466	G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	2	3	0	0	0	7	0
G 467	G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	2	4	0	0	0	8	0
G 468	G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	2	4	0	0	0	8	0
G 469	G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	2	3	0	0	0	7	0
G 470	G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION	2	3	0	0	0	7	0
G 471	G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	3	4	1	2	0	8	0
G 472	G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	2	3	1	0	0	7	0
G 473	G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	3	4	2	2	0	11	0
G 474	G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	2	3	0	0	0	6	0
G 475	G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	2	3	1	2	0	6	0

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS GPSUM3 PAGE 19

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
G 476	G3-45 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	2	3	0	2	0	6	0	
H 477	H1-01 DO YOU USE OR REFER TO VARACTORS	3	3	2	0	0	7	0	
H 478	H1-02 DO YOU USE OR REFER TO TUNNEL DIODES	3	4	2	2	0	10	0	
H 479	H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)	3	3	2	0	0	8	0	SOLID-STATE
H 480	H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	6	7	4	10	0	11	0	SPECIAL PURPOSE
H 481	H1-05 DO YOU USE OR REFER TO ZENER DIODES	46	46	47	45	40	55	45	DEVICES
H 482	H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	31	33	27	31	29	40	24	
H 483	H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	69	71	65	66	76	65	67	
H 484	H2-02 DO YOU INSPECT POWER SUPPLIES	68	70	64	65	81	65	62	
H 485	H2-03 DO YOU CLEAN POWER SUPPLIES	54	58	48	46	68	51	50	
H 486	H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	48	50	45	39	57	43	52	POWER SUPPLIES
H 487	H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	62	64	59	60	72	58	60	
H 488	H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	64	64	64	63	71	60	62	
H 489	H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	62	64	57	55	79	59	55	
H 490	H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	58	61	53	52	67	55	55	
H 491	H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	39	39	36	35	51	33	40	
H 492	H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	42	42	42	39	51	41	33	
H 493	H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS	39	40	38	35	49	37	40	
H 494	H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	51	50	52	42	58	45	50	
H 495	H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE	63	66	59	60	76	61	48	
H 496	H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY	47	48	44	39	56	42	40	
H 497	H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	38	42	32	39	49	37	26	
H 498	H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	48	50	44	45	54	52	29	
H 499	H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	14	15	13	3	19	17	5	
H 500	H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	14	13	15	2	17	17	7	
H 501	H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	14	14	15	10	13	20	10	
H 502	H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	17	17	17	10	14	25	10	
H 503	H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	36	37	36	32	43	36	31	
H 504	H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	22	21	24	19	21	27	17	
H 505	H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	16	16	17	16	14	22	10	
H 506	H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	12	13	10	15	10	17	7	
H 507	H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	12	13	9	15	8	17	7	
H 508	H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	8	9	7	6	7	16	5	
H 509	H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	8	9	5	6	7	16	5	
H 510	H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	23	24	20	18	32	17	21	
H 511	H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	4	4	4	3	6	2	5	
H 512	H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	4	4	2	0	3	10	2	OSCILLATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
H 513	H3-02 DO YOU INSPECT OSCILLATORS	3	4	2	0	1	10	2	
H 514	H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	3	3	2	0	1	7	0	
H 515	H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	3	4	2	0	1	8	0	
H 516	H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	3	4	2	0	1	10	0	
H 517	H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	3	3	2	0	1	7	2	
H 518	H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	3	4	2	0	1	8	2	
H 519	H3-08 DO YOU USE OR REFER TO FEEDBACK	3	3	3	0	3	7	2	
H 520	H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	3	3	2	0	1	7	2	
H 521	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	3	3	2	0	1	7	0	
H 522	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	3	3	2	0	1	7	0	
H 523	H3-12 DO YOU USE OR REFER TO DAMPING	2	2	2	0	1	5	0	
H 524	H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	2	2	2	0	1	5	0	
H 525	H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	1	2	1	0	1	4	0	
H 526	H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	2	2	2	0	1	5	0	
H 527	H3-16 DO YOU USE OR REFER TO UNDER DAMPING	2	2	2	0	1	5	0	
H 528	H3-17 DO YOU USE OR REFER TO OVER DAMPING	2	2	2	0	1	5	0	
H 529	H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	2	3	0	0	0	6	0	
H 530	H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	3	4	1	0	0	8	0	
H 531	H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	1	2	0	0	0	4	0	
H 532	H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	1	1	1	0	0	1	0	
H 533	H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	1	2	0	0	0	5	0	
H 534	H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	1	2	0	0	0	5	0	
H 535	H3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	1	1	0	0	0	1	0	
H 536	H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	1	1	0	0	0	1	0	
H 537	H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	1	1	0	0	0	1	0	
H 538	H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	0	0	1	0	0	0	0	
I 539	I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	3	4	0	0	4	7	0	
I 540	I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	2	3	0	0	1	6	0	
I 541	I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	2	3	0	0	1	5	0	MULTIVIBRATORS
I 542	I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	2	3	0	0	1	5	0	
I 543	I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	2	3	0	0	1	6	0	
I 544	I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	2	4	0	0	3	6	0	
I 545	I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	2	4	0	0	1	7	0	
I 546	I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS	2	3	0	0	1	6	0	
I 547	I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	1	2	0	0	0	4	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
I 548	I1-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS	1	2	0	0	0	5	0	
I 549	I1-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS	1	2	0	0	0	4	0	
I 550	I1-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD	1	2	0	0	3	2	0	
I 551	I1-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS	1	2	0	0	0	4	0	
I 552	I1-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	1	2	0	0	1	4	0	
I 553	I1-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS	2	3	0	0	3	5	0	
I 554	I1-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS	1	2	0	0	4	1	0	
I 555	I2-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB	10	13	7	3	13	14	10	
I 556	I2-02 DO YOU WORK WITH SERIES DIODE LIMITERS	6	7	6	0	6	12	5	LIMITERS AND CLAMPERS
I 557	I2-03 DO YOU WORK WITH SHUNT DIODE LIMITERS	7	8	4	2	11	10	0	
I 558	I2-04 DO YOU WORK WITH LIMITERS WITH BIAS	5	6	4	0	7	11	0	
I 559	I2-05 DO YOU WORK WITH ZENER DIODE LIMITERS	7	8	5	2	10	11	2	
I 560	I2-06 DO YOU WORK WITH TRANSISTOR LIMITERS	6	7	4	2	8	10	0	
I 561	I2-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	6	6	6	6	10	4	5	
I 562	I2-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	2	3	1	0	0	7	2	
I 563	I2-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	2	3	1	0	0	7	0	
I 564	I2-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT	4	4	2	2	8	2	0	
I 565	I3-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES	11	13	7	5	13	12	7	
I 566	I3-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	11	13	7	5	13	11	2	
I 567	I3-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	11	13	6	5	14	12	0	ELECTRON TUBES
I 568	I3-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES	9	10	7	2	14	11	2	
I 569	I3-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES	4	5	3	2	3	8	0	
I 570	I3-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	7	8	3	5	7	7	0	
I 571	I3-07 DO YOU USE OR REFER TO CUTOFF	5	6	4	2	7	7	2	
I 572	I3-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	5	5	4	2	7	7	0	
I 573	I3-09 DO YOU USE OR REFER TO PEAK CURRENT RATING	5	5	4	2	7	7	0	
I 574	I3-10 DO YOU USE OR REFER TO TRANSIT TIME	4	4	4	2	6	7	0	
I 575	I3-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING	4	5	3	2	6	10	0	
I 576	I3-12 DO YOU USE OR REFER TO SATURATION	5	6	3	2	7	8	0	
I 577	I3-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE	5	5	6	2	7	7	2	
I 578	I3-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES	3	4	3	2	3	7	0	
I 579	I3-15 DO YOU USE OR REFER TO PLATE VOLTAGE	8	9	7	5	8	11	2	
I 580	I3-16 DO YOU USE OR REFER TO PLATE CURRENT	8	9	7	5	8	11	2	
I 581	I3-17 DO YOU USE OR REFER TO GRID VOLTAGE	8	9	7	5	8	11	2	
I 582	I3-18 DO YOU USE OR REFER TO GRID CURRENT	8	9	7	5	8	11	2	
I 583	I3-19 DO YOU USE OR REFER TO CATHODE VOLTAGE	7	8	7	5	7	8	2	
I 584	I3-20 DO YOU USE OR REFER TO CATHODE CURRENT	7	8	7	5	7	8	2	
I 585	I3-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID VOLTAGE)	3	4	2	2	1	8	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
I 586	I3-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	2	3	2	2	0	7	0	
I 587	I3-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	3	3	3	2	3	7	0	
I 588	I3-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)	3	4	2	2	1	7	0	
I 589	I3-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES	3	3	2	2	0	7	0	
I 590	I3-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	3	4	3	3	3	7	0	
I 591	I3-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	3	3	3	2	1	7	0	
I 592	I3-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	3	4	2	2	3	7	0	
I 593	I3-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	3	3	2	2	1	7	0	
I 594	I3-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	4	4	3	2	4	8	0	
I 595	I3-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	4	4	3	2	4	6	0	
I 596	I3-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	3	4	3	2	4	7	0	
I 597	I3-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	3	4	2	2	4	6	0	
I 598	I3-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	6	6	5	2	6	11	0	
I 599	I3-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	5	5	4	2	4	10	0	
I 600	I3-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	7	9	2	3	7	11	0	
I 601	I3-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	6	6	5	0	7	10	2	
I 602	I3-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	4	5	2	0	4	6	2	
I 603	I3-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	3	4	1	0	3	8	0	
I 604	I3-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	3	3	2	0	0	7	0	
I 605	I3-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	5	6	2	3	4	7	2	
I 606	I3-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	6	8	3	3	7	10	2	
I 607	I3-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE ELECTRON TUBES YOU WORK ON	4	6	1	0	6	11	0	
I 608	I3-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	5	8	1	3	6	10	0	
J 609	J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	2	4	0	0	1	6	0	
J 610	J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	2	3	0	0	0	6	0	ELECTRON TUBE AMPLIFIERS AND CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
J 611 J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	2	3	0	0	0	6	0	
J 612 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	2	3	0	0	0	6	0	
J 613 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	2	3	0	0	0	6	0	
J 614 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	1	2	0	0	0	4	0	
J 615 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	1	1	0	0	0	2	0	
J 616 J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)	4	4	3	0	4	6	2	
J 617 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	5	7	3	3	6	7	2	SPECIAL PURPOSE ELECTRON TUBES
J 618 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	1	1	0	0	0	2	0	
J 619 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	1	2	0	0	1	4	0	
J 620 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS	2	3	1	0	1	5	0	
J 621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	3	4	2	0	4	5	2	
J 622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	3	5	0	3	1	5	0	
J 623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	3	4	0	0	3	5	0	
J 624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	3	4	0	0	1	6	0	
J 625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	2	3	1	3	0	2	0	
J 626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	2	3	0	3	0	5	0	
J 627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	1	2	0	0	0	5	0	
J 628 J2-13 DO YOU USE OR REFER TO PERSISTENCE	1	2	0	3	0	1	0	
J 629 J2-14 DO YOU USE OR REFER TO DECAY TIMES	2	3	0	3	1	2	0	
J 630 J2-15 DO YOU USE OR REFER TO FLUORESCENCE	2	3	1	3	0	4	0	
J 631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	2	3	1	3	0	4	0	
J 632 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	1	1	1	0	0	2	0	
J 633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	1	1	0	0	0	2	0	HETERODYNING, MODULATION, AND DEMODULATION
J 634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	1	1	0	0	0	2	0	
J 635 J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	1	1	0	0	0	2	0	
J 636 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	1	1	0	0	0	2	0	
J 637 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	1	1	0	0	0	2	0	
K 638 K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	0	0	1	0	0	1	0	
K 639 K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	0	0	1	0	0	1	0	AM SYSTEMS
K 640 K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	
K 641 K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
K 642	K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	0	0	1	0	0	1	0	
K 643	K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	0	0	1	0	0	1	0	
K 644	K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	1	0	1	0	0	2	0	
K 645	K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	1	0	1	0	0	2	0	
K 646	K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	0	0	0	0	0	0	0	
K 647	K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	0	0	0	0	0	0	0	
K 648	K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	0	0	0	0	0	1	0	
K 649	K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	0	0	0	0	0	0	0	
K 650	K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	0	0	0	0	0	0	0	
K 651	K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	0	0	0	0	0	0	0	
K 652	K1-15 DO YOU PERFORM TASKS ON DETECTORS	0	0	0	0	0	0	0	
K 653	K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE	0	0	0	0	0	0	0	
K 654	K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	0	0	0	0	0	1	0	
K 655	K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	0	0	0	0	0	1	0	
K 656	K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	0	0	0	0	0	0	0	
K 657	K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	0	0	0	0	0	0	0	
K 658	K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	0	0	0	0	0	0	0	
K 659	K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	0	0	0	0	0	0	0	
K 660	K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	0	0	0	0	0	0	0	
K 661	K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	0	0	0	0	0	0	0	
K 662	K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	0	0	0	0	0	0	0	
K 663	K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	0	0	0	0	0	0	0	
K 664	K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	0	0	0	0	0	1	0	
K 665	K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	0	0	0	0	0	1	0	
K 666	K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	0	0	0	0	0	0	0	
K 667	K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	
K 668	K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	FM SYSTEMS
K 669	K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	
K 670	K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	
K 671	K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	0	0	0	
K 672	K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	
K 673	K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	0	1	0	
K 674	K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	0	0	0	0	0	0	0	
K 675	K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	0	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-ISK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
K 676	K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	0	0	0	0	0	1	0	
K 677	K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	0	0	0	0	0	1	0	
K 678	K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	0	0	0	0	0	0	0	
K 679	K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	0	0	0	0	0	1	0	
K 680	K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	0	0	0	0	0	0	0	
K 681	K2-16 DO YOU PERFORM TASKS ON LIMITERS	1	0	1	0	1	1	0	
K 682	K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	0	0	0	0	0	1	0	
K 683	K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	0	0	0	0	0	1	0	
K 684	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	0	0	0	0	0	0	0	
K 685	K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	3	3	4	0	4	5	5	
K 686	K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	4	4	4	0	4	5	5	NUMBERING SYSTEMS
K 687	K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	2	1	2	0	1	2	2	
K 688	K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	2	1	2	0	1	2	2	
K 689	K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	3	4	2	0	1	6	2	
K 690	K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	1	2	1	0	1	2	0	
K 691	K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	3	4	3	0	1	7	2	
K 692	K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	3	3	2	0	1	5	2	
K 693	K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	3	4	2	0	1	6	2	
K 694	K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	2	1	3	0	1	4	2	
L 695	L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	1	1	2	2	0	1	2	
L 696	L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	1	0	1	0	0	0	2	
L 697	L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	0	0	1	0	0	0	2	LOGIC FUNCTIONS
L 698	L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	0	0	1	0	0	0	2	
L 699	L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	0	0	1	0	0	0	2	
L 700	L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	0	0	1	0	0	0	2	
L 701	L1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	0	0	1	0	0	0	2	
L 702	L1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	0	0	1	0	0	0	2	
L 703	L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	0	0	1	0	0	0	2	
L 704	L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	1	0	2	0	0	0	2	
L 705	L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	1	0	2	0	0	0	2	
L 706	L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	0	0	1	0	0	0	2	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
L 707	L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	1	0	2	0	0	0	2	
L 708	L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS	0	0	0	0	0	0	0	
L 709	L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	0	0	0	0	0	0	0	BOOLEAN EQUATIONS
L 710	L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	0	0	0	0	0	0	0	
L 711	L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	0	0	1	0	0	0	0	
L 712	L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	0	0	1	0	0	0	0	
L 713	L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	0	0	1	0	0	0	0	
L 714	L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	0	0	1	0	0	0	0	
L 715	L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	0	0	0	0	0	0	0	
L 716	L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	0	0	0	0	0	0	0	
L 717	L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	0	0	1	0	0	0	0	
L 718	L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	0	0	1	0	0	0	0	
L 719	L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	0	0	1	0	0	0	0	
L 720	L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	0	0	0	0	0	0	0	
L 721	L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	0	0	0	0	0	0	0	
L 722	L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	0	0	0	0	0	0	0	
L 723	L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	0	0	0	0	0	0	0	
L 724	L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	0	0	0	0	0	0	0	
L 725	L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	0	0	0	0	0	0	0	
L 726	L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	0	0	0	0	0	0	0	
L 727	L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	0	0	0	0	0	0	0	
L 728	L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	0	0	0	0	0	0	0	
L 729	L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	0	0	1	0	0	0	0	
L 730	L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	0	0	1	0	0	0	0	
L 731	L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	0	0	0	0	0	0	0	
L 732	L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	0	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	5	7	1	5	6	8	0	
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS	3	4	1	0	3	7	0	
L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS	3	4	1	0	3	7	0	COUNTERS
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS	0	0	0	0	0	1	0	
L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS	1	1	0	0	1	1	0	
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS	1	1	1	2	1	2	0	
L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS	1	2	0	3	0	2	0	
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	1	2	0	2	1	2	0	
L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS	1	1	1	0	0	2	0	
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS	1	1	1	0	0	2	0	
L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	1	1	0	2	0	1	0	
L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	1	1	0	2	0	1	0	
L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	0	0	0	0	0	1	0	
L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	1	1	0	2	0	1	0	
L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	0	0	0	0	0	1	0	
L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	0	0	0	0	0	1	0	
L 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	1	2	0	3	1	2	0	
L 750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	0	0	0	0	0	1	0	
L 751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	0	0	0	0	0	1	0	
L 752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTERS	0	0	0	0	0	1	0	
L 753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	1	1	0	0	1	1	0	
L 754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	0	0	0	0	0	1	0	
L 755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	1	1	0	2	0	1	0	
L 756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	1	1	0	2	0	1	0	
M 757 M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	7	7	7	0	8	10	2	
M 758 M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	3	3	2	0	0	7	0	
M 759 M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	3	4	2	0	1	7	2	
M 760 M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	2	2	2	0	1	5	0	TIMING CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
M 761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	3	4	2	0	0	8	0	
M 762 M1-06 DO YOU USE OR REFER TO RISE TIME	2	2	2	0	0	5	0	
M 763 M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	1	1	2	0	0	4	0	
M 764 M1-08 DO YOU USE OR REFER TO SWEEP TIME	6	7	6	3	3	10	2	
M 765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	7	7	7	0	4	11	2	
M 766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	7	6	8	0	4	10	5	
M 767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	4	3	7	0	1	6	2	
M 768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	3	2	4	0	1	4	0	
M 769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	14	16	12	10	7	23	7	
M 770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	15	15	14	10	8	25	7	
M 771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	9	8	9	5	6	14	2	USE OF SIGNAL GENERATORS
M 772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	13	13	13	8	7	23	7	
M 773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	8	8	7	5	4	13	2	
M 774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	5	6	2	0	3	8	2	
M 775 M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	4	5	2	0	1	8	2	
M 776 M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH	3	4	2	0	3	6	0	
M 777 M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH	3	4	2	0	3	6	0	
M 778 M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	8	9	7	6	3	14	5	
M 779 M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS	87	89	84	84	93	89	79	
M 780 M3-02 DO YOU INSPECT MOTORS	74	75	72	58	82	82	67	MOTORS AND GENERATORS
M 781 M3-03 DO YOU CLEAN OR LUBRICATE MOTORS	57	61	50	47	65	61	40	
M 782 M3-04 DO YOU OPERATE MOTORS	75	75	74	65	79	84	67	
M 783 M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	68	69	66	50	75	75	60	
M 784 M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	54	60	44	42	67	57	43	
M 785 M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	82	82	83	73	86	88	79	
M 786 M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	59	63	53	44	68	64	57	
M 787 M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	42	46	36	35	38	52	33	
M 788 M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES	47	53	37	37	44	57	38	
M 789 M3-11 DO YOU PERFORM ANY TASKS ON ROTORS	45	52	34	34	43	57	36	
M 790 M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES	58	62	50	40	64	65	48	
M 791 M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	47	51	39	35	49	54	36	
M 792 M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	49	53	41	37	47	58	36	
M 793 M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	39	42	32	27	40	43	33	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
M 794	M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	16	17	15	10	13	27	10	
M 795	M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	20	21	18	15	19	31	10	
M 796	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	21	24	17	13	22	33	14	
M 797	M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	28	28	27	19	26	40	12	
M 798	M3-20 DO YOU WORK WITH INDUCTION MOTORS	40	41	37	32	38	49	26	
M 799	M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	39	40	37	35	32	55	14	
M 800	M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	51	52	50	40	53	65	29	
M 801	M3-23 DO YOU INSPECT GENERATORS	86	90	80	84	94	86	79	
M 802	M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS	61	65	52	55	57	59	55	
M 803	M3-25 DO YOU OPERATE GENERATORS	82	83	80	76	92	82	76	
M 804	M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	64	67	57	44	92	66	43	
M 805	M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS	62	67	55	63	57	63	60	
M 806	M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	86	87	85	77	90	90	79	
M 807	M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	65	70	56	66	64	63	57	
N 808	N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	84	84	84	79	85	93	86	
N 809	N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	28	30	24	24	31	33	19	
N 810	N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	29	30	26	24	35	30	19	METER MOVEMENTS
N 811	N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	21	22	20	15	19	29	14	
N 812	N1-05 DO YOU READ METER SCALES	90	91	88	82	96	98	90	
N 813	N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	40	42	36	39	44	43	31	
N 814	N1-07 DO YOU ZERO OHMMETERS	88	89	87	82	94	94	90	
N 815	N1-08 DO YOU ZERO AMMETERS	36	39	31	29	49	34	36	
N 816	N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	48	47	49	52	46	53	48	
N 817	N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	42	43	39	39	40	47	43	
N 818	N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	11	14	6	11	10	16	5	
N 819	N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	9	12	2	10	6	13	2	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS
N 820	N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	8	12	2	8	6	13	2	
N 821	N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	5	8	1	3	4	8	0	
N 822	N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	10	13	4	10	6	13	5	
N 823	N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	10	13	4	10	8	14	5	
N 824	N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	6	9	1	5	6	10	2	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
N 825	N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	3	4	1	2	1	7	0	
N 826	N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	3	5	1	2	1	8	0	
N 827	N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	4	6	0	3	1	8	0	
N 828	N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS	3	5	0	0	1	10	0	
N 829	N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS	2	4	0	0	1	6	0	
N 830	N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS	4	7	0	0	4	10	0	
N 831	N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS	4	7	0	2	3	10	0	
N 832	N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS	5	7	1	2	4	10	0	
N 833	N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS	6	8	3	2	6	11	0	
N 834	N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB	3	4	0	2	3	8	0	
N 835	N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	2	3	1	2	3	5	0	WAVESHAPING
N 836	N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	2	3	0	2	0	6	0	CIRCUITS
N 837	N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	2	3	1	0	3	6	0	
N 838	N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	2	3	0	0	1	6	0	
N 839	N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	3	4	1	2	4	5	0	
N 840	N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	3	4	1	2	3	7	0	
N 841	N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT	2	3	1	0	1	6	0	
N 842	N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION	2	3	1	0	3	6	0	
N 843	N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS	2	4	0	0	0	6	0	
N 844	N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	1	2	0	0	0	5	0	
O 845	01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB	1	0	1	0	0	2	0	
O 846	01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	
O 847	01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	
O 848	01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	SINGLE SIDEBAND
O 849	01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	1	0	0	1	0	SYSTEMS
O 850	01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS	0	0	1	0	0	1	0	
O 851	01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	
O 852	01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS	0	0	1	0	0	1	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
0 853	01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	0	0	0	0	0	0	0	
0 854	01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS	0	0	0	0	0	0	0	
0 855	01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	0	0	0	0	0	0	0	
0 856	01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS	0	0	0	0	0	0	0	
0 857	01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	0	0	0	0	0	0	0	
0 858	01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	0	0	0	0	0	0	0	
0 859	01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS	0	0	0	0	0	0	0	
0 860	01-16 DO YOU PERFORM TASKS ON SSB MIXERS	0	0	0	0	0	0	0	
0 861	01-17 DO YOU PERFORM TASKS ON SSB DRIVERS	0	0	0	0	0	0	0	
0 862	01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	0	0	0	0	0	0	0	
0 863	01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS	0	0	0	0	0	0	0	
0 864	01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	0	0	0	0	0	0	0	
0 865	01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS	0	0	0	0	0	0	0	
0 866	01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS	0	0	0	0	0	0	0	
0 867	01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES	0	0	0	2	0	0	0	
0 868	01-24 DO YOU USE OR REFER TO SELECTIVE FADING	0	0	0	0	0	0	0	
0 869	01-25 DO YOU USE OR REFER TO PEAK POWER	0	0	0	0	0	0	0	
0 870	01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY	0	0	0	0	0	0	0	
0 871	01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS	0	0	0	0	0	0	0	
0 872	01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS	0	0	0	0	0	0	0	
0 873	01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	0	
0 874	01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	0	
0 875	02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB	0	0	0	0	0	0	0	
0 876	02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS	0	0	0	0	0	0	0	PULSE MODULATION
0 877	02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS	0	0	0	0	0	0	0	SYSTEMS
0 878	02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS	0	0	0	0	0	0	0	
0 879	02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	0	0	0	0	0	0	0	
0 880	02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS	0	0	0	0	0	0	0	
0 881	02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	0	0	0	0	0	0	0	
0 882	02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS	0	0	0	0	0	0	0	
0 883	02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS	0	0	0	0	0	0	0	
0 884	02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS	0	0	0	0	0	0	0	
0 885	02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS	0	0	0	0	0	0	0	
0 886	02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	0	0	0	0	0	0	0	
0 887	02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS	0	0	0	0	0	0	0	
0 888	02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM	0	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

			SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
0	889	02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	0	0	0	0	0	0	0	
0	890	02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	0	0	0	0	0	0	0	
0	891	02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	0	0	0	0	0	0	0	
0	892	02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	0	0	0	0	0	0	0	
0	893	02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS	0	0	0	0	0	0	0	
0	894	02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	0	0	0	0	0	0	0	
0	895	02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	0	0	0	0	0	0	0	
0	896	02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	0	0	0	0	0	0	0	
0	897	02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	0	0	0	0	0	0	0	
0	898	02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	0	0	0	0	0	0	0	
0	899	02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	0	0	0	0	0	0	0	
0	900	02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	0	0	0	0	0	0	0	
0	901	02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	0	0	0	0	0	0	0	
0	902	02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES	0	0	0	0	0	0	0	
0	903	02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	0	0	0	0	0	0	0	
0	904	02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	0	0	0	0	0	0	0	
0	905	02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	0	0	0	0	0	0	0	
0	906	02-32 DO YOU USE OR REFER TO PULSE SHAPE	0	0	0	0	0	0	0	
0	907	02-33 DO YOU USE OR REFER TO PEAK POWER	0	0	0	0	0	0	0	
0	908	02-34 DO YOU USE OR REFER TO AVERAGE POWER	0	0	0	0	0	0	0	
0	909	02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	0	0	0	0	0	0	0	
0	910	02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	0	0	0	0	0	0	0	
0	911	02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	0	0	0	0	0	0	0	
0	912	02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	0	
0	913	02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	0	
0	914	03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	1	0	2	0	0	1	0	
0	915	03-02 DO YOU INSPECT ANTENNAS	0	0	1	0	0	0	0	ANTENNAS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057
0 916	03-03 DO YOU CLEAN ANTENNAS	0	0	0	0	0	0	0
0 917	03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	0	0	0	0	0	0	0
0 918	03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	0	0	1	0	0	0	0
0 919	03-06 DO YOU TROUBLESHOOT TO ANTENNAS	1	0	2	0	0	1	0
0 920	03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	0	0	1	0	0	0	0
0 921	03-08 DO YOU REMOVE OR INSTALL ANTENNAS	0	0	1	0	0	1	0
0 922	03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	0	0	0	0	0	0	0
0 923	03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	0	0	1	0	0	0	0
0 924	03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	0	0	1	0	0	0	0
0 925	03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	0	0	0	0	0	0	0
0 926	03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS INDUCTIVE LOADS TO THE GENERATOR	0	0	1	0	0	0	0
0 927	03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS TO THE GENERATOR	0	0	1	0	0	0	0
0 928	03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS TO THE GENERATOR	0	0	1	0	0	0	0
0 929	03-16 DO YOU WORK WITH HERTZ ANTENNAS	0	0	1	0	0	0	0
0 930	03-17 DO YOU WORK WITH MARCONI ANTENNAS	0	0	0	0	0	0	0
0 931	03-18 DO YOU WORK WITH BROADSIDE ARRAYS	0	0	0	0	0	0	0
0 932	03-19 DO YOU WORK WITH END-FIRE ARRAYS	0	0	0	0	0	0	0
0 933	03-20 DO YOU WORK WITH CARDIOID ARRAYS	0	0	0	0	0	0	0
0 934	03-21 DO YOU WORK WITH COLLINEAR ARRAYS	0	0	0	0	0	0	0
0 935	03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	0	0	1	0	0	0	0
0 936	03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	0	0	1	0	0	0	0
0 937	03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	0	0	1	0	0	0	0
0 938	03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	0	0	0	0	0	0	0
0 939	03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	0	0	0	0	0	0	0
0 940	03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	0	0	0	0	0	0	0
0 941	03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	0	0	1	0	0	0	0
0 942	03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	0	0	1	0	0	0	0
0 943	03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	0	0	1	0	0	0	0
0 944	03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS	0	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
O 945	03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	0	0	0	0	0	0	0	
O 946	03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	0	0	0	0	0	0	0	
O 947	03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	0	0	0	0	0	0	0	
O 948	03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	0	0	1	0	0	0	0	
O 949	03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	0	0	0	0	0	0	0	
O 950	03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	0	0	0	0	0	0	0	
O 951	03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	0	0	1	0	0	0	0	
O 952	03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS	0	0	0	0	0	0	0	
P 953	P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES	1	1	1	0	1	2	0	TRANSMISSION LINES
P 954	P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES	0	0	0	0	0	0	0	
P 955	P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	0	0	0	0	0	0	0	
P 956	P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	0	0	0	0	0	0	0	
P 957	P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	0	0	0	0	0	0	0	
P 958	P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	0	0	0	0	0	0	0	
P 959	P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	0	0	0	0	1	0	0	
P 960	P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	1	1	0	0	1	1	0	
P 961	P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	0	0	0	0	1	0	0	
P 962	P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	1	0	1	0	1	1	0	
P 963	P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	1	0	1	0	1	1	0	
P 964	P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	1	0	1	0	0	1	0	
P 965	P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)	0	0	0	0	0	0	0	
P 966	P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	0	0	0	0	0	0	0	
P 967	P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	0	0	0	0	1	0	0	
P 968	P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SR) OF TRANSMISSION LINES	0	0	0	0	0	0	0	
P 969	P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	0	0	0	0	0	0	0	
P 970	P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS	0	0	0	0	0	1	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
P 971	P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	0	0	1	0	0	0	?	
P 972	P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	0	0	0	0	0	0	0	
P 973	P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0	0	
P 974	P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES	0	0	0	0	0	0	0	
P 975	P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES	0	0	0	0	0	0	0	
P 976	P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	0	0	0	0	0	0	0	
P 977	P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	0	0	0	0	0	0	0	
P 978	P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	0	0	0	0	0	0	0	
P 979	P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	0	0	0	0	0	0	0	
P 980	P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES	0	0	0	0	0	1	0	
P 981	P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	0	0	0	0	0	0	0	
P 982	P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	0	0	0	0	0	0	0	
P 983	P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	0	0	0	0	0	0	0	
P 984	P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	0	0	0	0	0	0	0	
P 985	P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0	
P 986	P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0	WAVEGUIDES AND CAVITY RESONATORS
P 987	P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	0	0	1	0	0	1	0	
P 988	P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0	
P 989	P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0	
P 990	P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0	
P 991	P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0	
P 992	P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	0	0	0	0	0	0	0	
P 993	P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	0	0	0	0	0	0	0	
P 994	P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	0	0	0	0	0	0	0	
P 995	P2-12 DO YOU REMOVE OR INSTALL E BENDS	0	0	0	0	0	0	0	
P 996	P2-13 DO YOU REMOVE OR INSTALL H BENDS	0	0	0	0	0	0	0	
P 997	P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	0	0	0	0	0	0	0	
P 998	P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS	0	0	0	0	0	0	0	
P 999	P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	0	0	0	0	0	0	0	
P1000	P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	0	0	0	0	0	0	0	
P1001	P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	0	0	0	0	0	0	0	
P1002	P2-19 DO YOU USE OR REFER TO >A> WALL OF WAVEGUIDES	0	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057
P1003 P2-20 DO YOU USE OR REFER TO >B> WALL OF WAVEGUIDES	0	0	0	0	0	0	0
P1004 P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	0	0	0	0	0	0	0
P1005 P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	0	0	0	0	0	0	0
P1006 P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	0	0	0	0	0	0	0
P1007 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	0	0	0	0	0	0	0
P1008 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	0	0	0	0	0	0	0
P1009 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	0	0	0	0	0	0	0
P1010 P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A >B> WALL SIZE OF .7 WAVELENGTHS OF THE OPERATING FREQUENCY	0	0	0	0	0	0	0
P1011 P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST >A> WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 USED AS AN AVERAGE	0	0	0	0	0	0	0
P1012 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	0	0	0	0	0	0	0
P1013 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	0	0	0	0	0	0	0
P1014 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF >E> FIELD, OR DIRECTION OF >H> FIELD IN WAVEGUIDES	0	0	0	0	0	0	0
P1015 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK >E> OR >H> LINES IN WAVEGUIDES	0	0	0	0	0	0	0
P1016 P2-33 DO YOU MEASURE THE TIME PHASE OF >E> OR >H> LINES IN WAVEGUIDES	0	0	0	0	0	0	0
P1017 P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF >E> OR >H> LINES IN WAVEGUIDES	0	0	0	0	0	0	0
P1018 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1019 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1020 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	1	0	1	0	0
P1021 P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1022 P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1023 P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0	0
P1024 P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
P1025	P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0	0	
P1026	P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0	
P1027	P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0	
P1028	P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0	
P1029	P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	0	0	0	0	0	0	0	
P1030	P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	0	0	0	0	0	0	0	
P1031	P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	0	0	0	0	0	0	0	
P1032	P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	0	0	0	0	0	0	0	
P1033	P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	0	0	0	0	0	0	0	
P1034	P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS	1	1	0	0	0	2	0	MICROWAVE AMPLIFIERS AND OSCILLATORS
P1035	P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	0	0	0	0	0	1	0	
P1036	P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	1	1	0	0	0	2	0	
P1037	P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE	1	1	0	0	0	2	0	
P1038	P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY	1	1	0	0	0	2	0	
P1039	P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	1	1	0	0	0	2	0	
P1040	P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING	1	1	0	0	0	2	0	
P1041	P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS	0	0	0	0	0	1	0	
P1042	P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS	0	0	0	0	0	1	0	
P1043	P3-10 DO YOU WORK WITH REFLEX KLYSTRONS	0	0	0	0	0	1	0	
P1044	P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)	0	0	0	0	0	1	0	
P1045	P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS	1	1	0	0	0	2	0	
P1046	P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	0	0	0	0	0	1	0	
P1047	P3-14 DO YOU WORK WITH MAGNETRONS	1	1	0	0	0	2	0	
P1048	P3-15 DO YOU INSPECT KLYSTRONS OR TWT	1	1	0	0	0	2	0	
P1049	P3-16 DO YOU CLEAN KLYSTRONS OR TWT	0	0	0	0	0	1	0	
P1050	P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	0	0	0	0	0	0	0	
P1051	P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY	0	0	0	0	0	0	0	
P1052	P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	0	0	0	0	0	0	0	
P1053	P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT	0	0	0	0	0	1	0	
P1054	P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT	0	0	0	0	0	1	0	
P1055	P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS	0	0	0	0	0	1	0	
P1056	P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS	1	1	0	0	0	2	0	
P1057	P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS	0	0	0	0	0	1	0	
P1058	P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057
P1059	P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0
P1060	P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0
P1061	P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0
P1062	P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	0	0	0	0	0	1	0
P1063	P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	0	0	0	0	0	0	0
P1064	P3-31 DO YOU INSPECT MAGNETRONS	0	0	0	0	0	1	0
P1065	P3-32 DO YOU CLEAN MAGNETRONS	0	0	0	0	0	1	0
P1066	P3-33 DO YOU ADJUST MAGNETRONS	0	0	0	0	0	0	0
P1067	P3-34 DO YOU TUNE MAGNETRONS	0	0	0	0	0	0	0
P1068	P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	0	0	0	0	0	0	0
P1069	P3-36 DO YOU TROUBLESHOOT MAGNETRONS	0	0	0	0	0	0	0
P1070	P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	0	0	0	0	0	1	0
P1071	P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	0	0	0	0	0	1	0
P1072	P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	1	1	0	0	0	2	0
P1073	P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	0	0	0	0	0	1	0
P1074	P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	0	0	0	0	0	1	0
P1075	P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	0	0	0	0	0	0	0
P1076	P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	0	0	0	0	0	0	0
P1077	P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	0	0	0	0	0	1	0
P1078	P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	0	0	0	0	0	0	0
P1079	P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	0	0	0	0	0	1	0
P1080	P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	0	0	0	0	0	1	0
P1081	P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES	0	0	0	0	0	0	0
P1082	P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	0	0	0	0	0	1	0
P1083	P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	0	0	0	0	0	1	0
P1084	P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	0	0	0	0	0	0	0
P1085	P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	0	0	0	0	0	1	0
P1086	P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	0	0	0	0	0	1	0
P1087	P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	0	0	0	0	0	1	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
P1088	P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	0	0	0	0	0	1	0	
P1089	P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	0	0	0	0	0	1	0	
P1090	P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	0	0	0	0	0	1	0	
P1091	P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	0	0	0	0	0	1	0	
P1092	P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	0	0	0	0	0	1	0	
P1093	P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES	0	0	0	0	0	0	0	
P1094	P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	1	1	0	0	0	2	0	
P1095	P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	1	1	0	0	0	2	0	
P1096	P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	0	0	0	0	0	1	0	
P1097	P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	0	0	0	0	0	1	0	
P1098	P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	0	0	0	0	0	1	0	
P1099	P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	0	0	0	0	0	0	0	
P1100	P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	0	0	0	0	0	1	0	
P1101	P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	0	0	0	0	0	0	0	
P1102	P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	0	0	0	0	0	1	0	
P1103	P3-70 DO YOU PERFORM TASKS ON ANODES	0	0	0	0	0	1	0	
P1104	P3-71 DO YOU PERFORM TASKS ON ANODE COOLING FINS	0	0	0	0	0	0	0	
P1105	P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	0	0	0	0	0	0	0	
P1106	P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	0	0	0	0	0	1	0	
P1107	P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	0	0	0	0	0	0	0	
P1108	P3-75 DO YOU PERFORM TASKS ON CATHODES	0	0	0	0	0	1	0	
P1109	P3-76 DO YOU PERFORM TASKS ON MAGNETS	0	0	0	0	0	1	0	
Q1110	Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	1	1	2	2	1	2	0	
Q1111	Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	1	1	2	2	0	4	0	REGISTERS
Q1112	Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	1	1	2	2	0	4	0	
Q1113	Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	1	1	2	2	1	2	0	
Q1114	Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	1	0	2	0	0	2	0	
Q1115	Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	3	3	2	2	1	6	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
Q1116	Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED	1	1	1	0	1	4	0	
Q1117	Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	1	1	1	2	1	1	2	
Q1118	Q2-02 DO YOU USE OR REFER TO DELAY LINES	1	1	1	2	0	1	2	STORAGE DEVICES
Q1119	Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES	1	1	1	2	1	1	2	
Q1120	Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	1	0	1	2	0	0	2	
Q1121	Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES	1	1	1	2	0	1	2	
Q1122	Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS	1	1	1	2	0	1	2	
Q1123	Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	0	0	0	0	0	0	0	
Q1124	Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	0	0	0	0	0	0	0	
Q1125	Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	0	0	0	0	0	1	0	
Q1126	Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) CONVERTERS, OR BINARY-TO-DECIMAL READOUT CONVERTERS	0	0	0	0	0	0	0	DIGITAL TO ANALOG CONVERTERS
Q1127	Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES	0	0	0	0	0	0	0	
Q1128	Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE RESISTORS	0	0	0	0	0	0	0	
Q1129	Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	0	0	0	0	0	0	0	
Q1130	Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	0	0	0	0	0	0	0	
Q1131	Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	0	0	0	0	0	0	0	
Q1132	Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	0	0	0	0	0	0	0	
Q1133	Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	0	0	0	0	0	0	0	
Q1134	Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	0	0	0	0	0	0	0	
Q1135	Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	0	0	0	0	0	0	0	
Q1136	Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	0	0	0	0	0	0	0	
Q1137	Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	0	0	0	0	0	0	0	
Q1138	Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	0	0	0	0	0	0	0	
Q1139	Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	0	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
R1140	R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	0	0	0	0	0	0	0	PHANTASTRONS
R1141	R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	0	0	0	0	0	0	0	
R1142	R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	0	SCHMITT TRIGGERS
R1143	R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	0	0	0	0	0	0	0	
R1144	R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	20	26	8	15	29	18	5	
R1145	R3-02 DO YOU FABRICATE COAXIAL CABLES	8	8	7	6	11	7	7	CABLE FABRICATION
S1146	S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	5	6	5	5	7	6	5	
S1147	S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	1	0	1	0	0	2	0	INPUT/OUTPUT DEVICES
S1148	S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	0	0	1	0	0	1	0	
S1149	S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	2	3	1	2	1	5	0	PHOTO SENSITIVE DEVICES
S1150	S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	1	0	2	0	0	2	2	
S1151	S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	1	0	2	0	0	2	2	
S1152	S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	1	0	2	0	0	2	2	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
S1153	S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	1	0	2	0	0	2	2	
S1154	S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	1	0	3	2	1	2	2	
S1155	S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	0	0	0	0	0	1	0	
S1156	S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	1	0	2	0	0	2	2	
S1157	S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	1	0	1	0	0	2	0	
S1158	S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	1	0	1	0	0	2	0	
T1159	T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	0	0	1	0	0	0	2	
T1160	T1-02 DO YOU INSPECT INFRARED SYSTEMS	0	0	1	0	0	0	2	
T1161	T1-03 DO YOU CLEAN INFRARED SYSTEMS	0	0	1	0	0	0	2	INFRARED
T1162	T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	0	0	0	0	0	0	0	
T1163	T1-05 DO YOU OPERATE INFRARED SYSTEMS	0	0	0	0	0	0	0	
T1164	T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	0	0	1	0	0	0	2	
T1165	T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	1	0	0	0	2	
T1166	T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	0	0	1	0	0	0	2	
T1167	T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	1	0	0	0	2	
T1168	T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	0	0	1	0	0	0	2	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
T1169	T1-11 DO YOU USE OR REFER TO FAR REGION	0	0	0	0	0	0	0	
T1170	T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION	0	0	0	0	0	0	0	
T1171	T1-13 DO YOU USE OR REFER TO NEAR REGION	0	0	0	0	0	0	0	
T1172	T1-14 DO YOU USE OR REFER TO MICRON	0	0	0	0	0	0	0	
T1173	T1-15 DO YOU USE OR REFER TO GRAY BODIES	0	0	0	0	0	0	0	
T1174	T1-16 DO YOU USE OR REFER TO BLACK BODIES	0	0	0	0	0	0	0	
T1175	T1-17 DO YOU USE OR REFER TO ABSORPTION	0	0	0	0	0	0	0	
T1176	T1-18 DO YOU USE OR REFER TO SCATTERING	0	0	0	0	0	0	0	
T1177	T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO	0	0	0	0	0	0	0	
T1178	T1-20 DO YOU PERFORM TASKS ON BLITZ	0	0	0	0	0	0	0	
T1179	T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS	0	0	0	0	0	0	0	
T1180	T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES	0	0	0	0	0	0	0	
T1181	T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES	0	0	0	0	0	0	0	
T1182	T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES	0	0	0	0	0	0	0	
T1183	T1-25 DO YOU PERFORM TASKS ON FILTERS	0	0	0	0	0	0	0	
T1184	T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	0	0	0	0	0	0	0	
T1185	T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS	0	0	0	0	0	0	0	
T1186	T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	0	0	0	0	0	0	0	
T1187	T2-02 DO YOU INSPECT LASER SYSTEMS	0	0	0	0	0	0	0	
T1188	T2-03 DO YOU CLEAN LASER SYSTEMS	0	0	1	2	0	0	0	LASERS
T1189	T2-04 DO YOU OPERATE LASER SYSTEMS	0	0	0	0	0	0	0	
T1190	T2-05 DO YOU OPERATE LASER SYSTEMS	0	0	0	0	0	0	0	
T1191	T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	0	0	1	2	0	0	0	
T1192	T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	0	0	0	
T1193	T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	0	0	0	
T1194	T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	0	0	0	
T1195	T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	0	0	0	
T1196	T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)	0	0	1	2	0	0	0	
T1197	T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	0	0	0	0	0	0	0	
T1198	T2-13 DO YOU USE OR REFER TO GROUND STATE	0	0	0	0	0	0	0	
T1199	T2-14 DO YOU USE OR REFER TO EXCITED STATE	0	0	0	0	0	0	0	
T1200	T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION	0	0	0	0	0	0	0	
T1201	T2-16 DO YOU USE OR REFER TO PHOTONS	0	0	0	0	0	0	0	
T1202	T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION	0	0	0	0	0	0	0	
T1203	T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION	0	0	0	0	0	0	0	
T1204	T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	0	0	0	0	0	0	0	
T1205	T2-20 DO YOU USE OR REFER TO INVERSION LEVEL	0	0	0	0	0	0	0	
T1206	T2-21 DO YOU USE OR REFER TO MONOCHROMATIC	0	0	0	0	0	0	0	
T1207	T2-22 DO YOU WORK WITH ACTIVE MATERIALS	0	0	0	0	0	0	0	
T1208	T2-23 DO YOU WORK WITH PUMPING SOURCES	0	0	0	0	0	0	0	
T1209	T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	0	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
T1210	T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS	0	0	0	0	0	0	0	
T1211	T2-26 DO YOU WORK WITH HELICAL FLASHTUBES	0	0	0	0	0	0	0	
T1212	T2-27 DO YOU WORK WITH RUBY	0	0	1	0	0	0	0	
T1213	T2-28 DO YOU WORK WITH HELIUM-NEON	0	0	0	0	0	0	0	
T1214	T2-29 DO YOU WORK WITH HELIUM-XENON	0	0	0	0	0	0	0	
T1215	T2-30 DO YOU WORK WITH XENON	0	0	0	0	0	0	0	
T1216	T2-31 DO YOU WORK WITH CESIUM-HELIUM	0	0	0	0	0	0	0	
T1217	T2-32 DO YOU WORK WITH ARGON	0	0	0	0	0	0	0	
T1218	T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS	0	0	0	0	0	0	0	
T1219	T2-34 DO YOU WORK WITH GALLIUM ARSENIDE	0	0	0	0	0	0	0	
T1220	T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE STORAGE TUBES (MMST)	0	0	0	0	0	0	0	
T1221	T3-02 DO YOU INSPECT DVST OR MMST	0	0	0	0	0	0	0	
T1222	T3-03 DO YOU CLEAN DVST OR MMST	0	0	0	0	0	0	0	DISPLAY TUBES
T1223	T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST	0	0	0	0	0	0	0	
T1224	T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST	0	0	0	0	0	0	0	
T1225	T3-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS	0	0	0	0	0	0	0	
T1226	T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	0	0	0	0	0	0	0	
T1227	T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST	0	0	0	0	0	0	0	
T1228	T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST	0	0	0	0	0	0	0	
T1229	T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS	0	0	0	0	0	0	0	
T1230	T3-11 DO YOU PERFORM TASKS ON WRITE GUNS	0	0	0	0	0	0	0	
T1231	T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS	0	0	0	0	0	0	0	
T1232	T3-13 DO YOU PERFORM TASKS ON ERASE GUNS	0	0	0	0	0	0	0	
T1233	T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS	0	0	0	0	0	0	0	
U1234	U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS	0	0	0	0	0	1	0	
U1235	U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS	0	0	0	0	0	1	0	
U1236	U1-03 DO YOU USE OR REFER TO PROGRAMS	1	0	1	2	0	1	0	PROGRAMMING
U1237	U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS	0	0	1	2	0	0	0	
U1238	U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS	0	0	0	0	0	0	0	
U1239	U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS	0	0	1	2	0	0	0	
U1240	U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS	1	0	1	2	0	1	0	
U1241	U1-08 DO YOU USE OR REFER TO TIME-SHARING	1	0	1	2	0	1	0	
U1242	U1-09 DO YOU USE OR REFER TO DATA WORDS	0	0	0	0	0	1	0	
U1243	U1-10 DO YOU USE OR REFER TO ADDRESS WORDS	0	0	0	0	0	1	0	
U1244	U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS	0	0	0	0	0	1	0	
U1245	U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION	0	0	0	0	0	0	0	
U1246	U1-13 DO YOU USE OR REFER TO INFORMATION WORDS	0	0	0	0	0	1	0	
U1247	U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	0	0	0	0	0	0	0	
U1248	U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	0	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK	SPC 051	SPC 052	SPC 053	SPC 054	SPC 055	SPC 056	SPC 057	
U1249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES	0	0	0	0	0	1	0	
U1250 U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES	0	0	0	0	0	1	0	
U1251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS	0	0	0	0	0	1	0	
U1252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS	0	0	0	0	0	0	0	
U1253 U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES	0	0	0	0	0	0	0	
U1254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES	0	0	0	0	0	1	0	
U1255 U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION	1	1	0	2	0	1	0	
U1256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	1	1	0	2	0	1	0	DB AND POWER RATIOS
U1257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	0	0	0	0	0	1	0	
U1258 U2-04 DUMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED NO TASKS	0	0	1	0	0	0	?	

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AIRCRAFT ELECTRICAL SYSTEMS SPECIALIST CAREER LADDER AFSC 42350--ETC(U)
OCT 77 T J O'CONNOR, W F KASPER

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Teaching Methods
Training

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Aircraft Electrical Systems Specialist (AFSC 42350). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

This specialty has the following functions:

Troubleshoots, inspects, installs, repairs, modifies, and overhauls aircraft electrical systems and associated electronic components, subsystems, and test equipment. Maintains inspection and maintenance records. Supervises aircraft electrical systems maintenance personnel.